

ABSTRACT OF THE DISCLOSURE

A sodium-based dechlorinating agent g is added to a flue gas G6; hydrogen chloride contained in this flue gas is removed as residue of dechlorination; the thus removed residue of dechlorination is dissolved by adding water i; water-insoluble constituents k are separated from the resulting aqueous solution j; and after adjusting pH of the aqueous solution l remaining after separation of the water-insoluble constituents k, mercury, dioxin and the like are removed and discharged. The sodium-based dechlorinating agent g is mixed with a hydrophilic anti-caking agent, with an angle of repose of 40° or more, a dispersibility of less than 50, and a floodability index value of less than 90. A mean particle diameter of sodium hydrogencarbonate is set within a range of from 2 μm to 30 μm . The hydrophilic anti-caking agent comprises silica, and is contained in an amount of 0.1 mass % or more in the sodium-based dechlorinating agent. Further, a mean particle diameter of the hydrophilic anti-caking agent is set within a range of from 0.001 μm to 1 μm . This permits inhibition of occurrence of a pressure drop and leakage in the filter cloth of the dust collector.